

MATERNAL AND INFANT HEALTH



Reducing Infant Mortality

Definition

Infant mortality refers to the death of an infant less than one year old. The infant mortality rate (IMR) is expressed as the number of infant deaths per 1,000 live births in the same year. Infant mortality is a benchmark of a nation's health and an indicator of health status and social well-being.

Problem

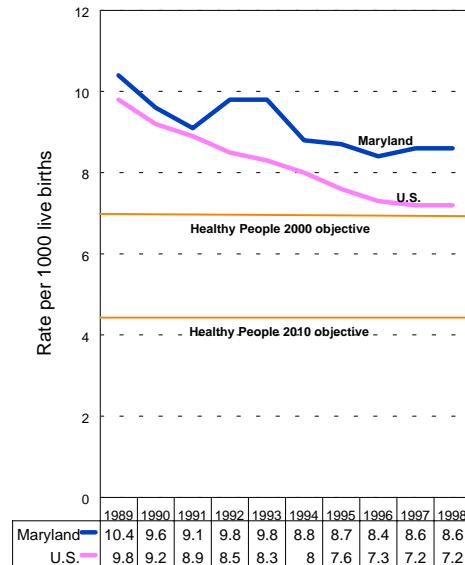
From the late 1980s through the mid-1990s, the infant mortality rate (IMR) in Maryland generally declined and reached an all-time low of 8.4 infant deaths per 1,000 live births in 1996. However, in 1997, the IMR increased to 8.6 deaths per 1,000 births and remained at that level in 1998. Although the IMR in Maryland has consistently been higher than that of the United States, the disparity in recent years has become greater. The 1998 Maryland IMR falls far short of the Healthy People 2000 Goal of 7.0 infant deaths per 1,000 live births. The Healthy People 2010 goal is a reduction of infant deaths to 4.5 per 1,000 live births.

Determinants

The major causes of infant mortality in Maryland are low birth weight (LBW), birth defects, and sudden infant death syndrome (SIDS). Associated factors include pre-natal infection, multiple gestations, and inadequate pre-natal care for high-risk pregnancies.

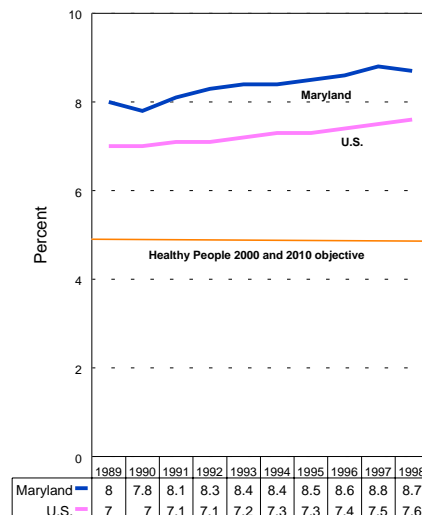
Birthweight is one of the most significant predictors of an infant's subsequent health and survival. In contrast to the decline in IMR, the rate of low birth weight has slowly increased during the 1990s. In 1998, the Maryland LBW rate was 16.7% higher than the U.S. rate and 74% higher than the Healthy People 2000 goal of five deaths per 1,000. The increase in low birthweight births is related to an increase in multiple gestations.

Infant Mortality Rate, Maryland and the United States, 1989-1998.



Source: Maryland Vital Statistics, 1998 Annual Report and National Vital Statistics System (NVSS), CDC, NCHS, 1998

Percentage of Low Birth Weight Infants, Maryland and the United States, 1989-1998.

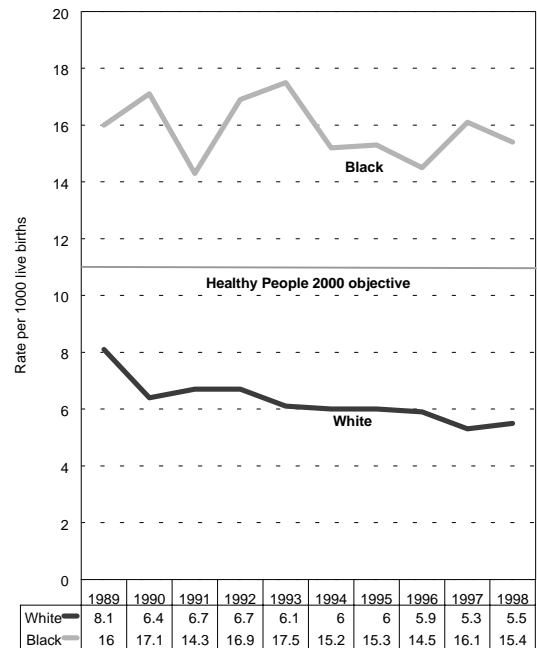


Source: Maryland Vital Statistics, 1998 Annual Report and National Vital Statistics System (NVSS), CDC, NCHS, 1998

African-Americans have significantly higher IMR and low birth weight rates than other racial groups. In the U.S. and Maryland, the IMR for African-Americans has always been much higher than for whites. In 1998 the Maryland African-American IMR was 15.4, which is higher than the Healthy People 2010 goal of 4.5 deaths per 1,000 births for all ethnic groups. Two of Maryland's 24 jurisdictions, Baltimore City and Prince George's County, accounted for 45% (272 of 601) of the 1998 infant deaths in Maryland. This racial disparity exists even in Maryland's most affluent communities. In Montgomery County, with one of the highest per capita and median incomes in the state and nationally, the 1998 Maryland Vital Statistics reflect a 2.5 times disparity between the African-American IMR (15.1 deaths per 1,000 births) and the white IMR (5.9 deaths per 1,000 births).

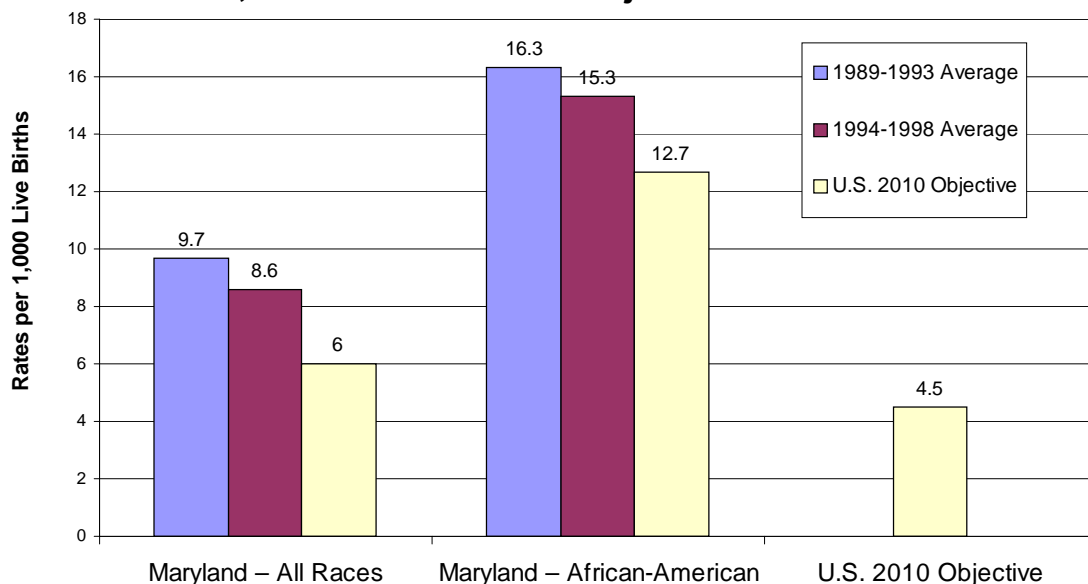
Research has shown that a non-prone sleeping position (sleeping on the back rather than the stomach) greatly reduces the risk of SIDS among healthy full-term infants.

Infant Mortality Rate by Race, Maryland, 1989-1998.



Source: Maryland Vital Statistics, 1998 Annual Report

Infant Mortality Rates and Healthy People 2010 Objectives by Race, Maryland, Selected Years, 1989-2010, and the U.S. 2010 Objective for All Races



Source: Maryland Vital Statistics, 1998 Annual Report

Of the many types of birth defects the only preventable ones are neural tube defects (NTDs). Approximately 50% of pregnancies affected with NTDs may be prevented with an adequate consumption of folic acid from one month before conception through the first three months of pregnancy. This nutritional intervention requires that all pregnancies be intended and planned.

The Maryland infant mortality rates for the five-year intervals 1989-1993 and 1994-1998 show a slope of decline that may continue for all races to 2010. This figure shows rate projections for all races of 6.0 and African-American of 12.7 that can be statistically supported for 2010 if the rate of decline continues the same as in the two previous time periods. These decreases will not be as dramatic as those anticipated for the U.S. IMR. Maryland faces several challenges in sustaining a more rapid IMR decrease; the greatest of these is a better understanding of the causes of the African-American/white disparity. Also, the rate of African-Americans living in Maryland is twice U.S. average and these numbers are increasing. Maryland demographics are different from the U.S., and the U.S. IMR objective of 4.5 may be too ambitious for Maryland to achieve.

Objective 1 - By the year 2010, the total infant mortality rate will be no more than 6.0 per 1,000 live births and 12.7 for African-Americans.

Objective 2 - By 2010, reduce the racial disparity between white and African-American in infant mortality to no more than a ratio of 1:3.

Objective 3 - By 2010, increase to 95% the number of pregnant women who start prenatal care in the first trimester.

Objective 4 - By 2010, reduce the incidence of low birth rate (<2500g) to no more than 8.0% of live births.

Objective 5 - By 2010, reduce the incidence of total preterm births to no more than 7.6%.

Objective 6 - By 2010, reduce to no more than 2% the proportion of women of childbearing years who use tobacco.

Objective 7 - By 2010, increase the percentage of healthy full-term infants who are put to sleep on their backs to 70%.

Objective 8 - By 2010, increase to 100% women taking folic acid prior to conception.

Objective 9 - By 2010, increase the percent of very low birth weight infants delivered at facilities for high risk deliveries and neonates (a Title V infrastructure building performance measure) from 86% in FY98 to 93% in FY2010.

Action Steps

- ⇒ Discover the demographic factors leading to the increase in disparity ratio.
- ⇒ Develop an advisory coalition of organizations, citizens, community leaders, and professionals to discuss issues concerning infant mortality, including: quality of care, access to care, reimbursement of high risk care, and development of new community expectations for the content and onset of prenatal care.
- ⇒ Bring together other entities with similar health concerns, such as HIV, Sexually Transmitted Diseases, Family Planning, and Managed Care Organizations.
- ⇒ Identify data that are missing and necessary to work toward Year 2010 goals and objectives.
- ⇒ Develop/continue educational programs, such as the “Baby on Back” campaign, smoking cessation, use of Family Planning for pregnancy spacing, importance of early and regular prenatal care, substance abuse avoidance, and recognition of preterm labor signs.
- ⇒ Prevent unintended pregnancy.
- ⇒ Develop methods for providing universal preconceptional care (e.g. folic acid consumption, nutrition counseling, immunization completion, genetic screening, care for chronic and acute medical conditions/problems, and psychosocial issues including domestic violence).
- ⇒ Increase prenatal care through provider/patient education of high-risk conditions (e.g. infertility treatments, multiple gestations, and previous premature delivery).
- ⇒ Ensure universal screening and treatment of sexually transmitted diseases.
- ⇒ Decrease cigarette smoking, substance abuse, and ingestion of alcohol in women who are pregnant.
- ⇒ Expand participation in the Fetal & Infant Mortality Review process to identify and develop solutions for problems associated with the perinatal systems of care (e.g. incomplete record data, inaccurate birth certificate information, lack of transportation to health care facilities, quality of high risk care, and community knowledge deficit about pregnancy).

Partners

Center for Maternal and Child Health, DHMH • Governor’s Office for Children, Youth, and Families • Johns Hopkins University • Maryland Local Health Departments • Planned Parenthood of Maryland, Inc. • University of Maryland, Baltimore County

References

American College of Obstetricians and Gynecologists. (1965). *Manual of Standards in Obstetric-Gynecological Practice* (2nd ed.). Chicago: The College.

Newcomer, Wendy E. & O’Campo, Patricia. (2000, February). *Maryland statewide maternal and child health (MCH) needs assessment initiative, interim report.*

Kotelchuck, M. (1994). An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *American Journal of Public Health, 84*, 1444-1420.

Maryland Department of Health and Mental Hygiene, Division of Health Statistics. (1998). *Maryland vital statistics annual report.*

Maryland Department of Health and Mental Hygiene, Panel on African-American/White Infant Mortality Gap. (1997). *Infant mortality in Maryland, 1997. Closing the gap: Addressing the disparity of infant mortality among African American and white infants: Approaches for clinicians and policy makers.*

Rayburn, W. F., et al. (1996). Periconceptional folate intake and neural tube defects. *Journal of the American College of Nutrition, 15*(2), 121-125.

Willinger, M., Hoffman, H. J., Wu, K. T., Hou, J. R. Hou, Kessler, R.C., Ward, S. L., Keens, T.G., Corwin, M. J. (1998). Factors associated with the transition to non-prone sleep positions of infants in the United States. From The National Infant Sleep Position Study. *Journal of the American Medical Association, 280*, 329-335.

Cross-Reference Table for Maternal and Infant Health

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